

Ecosystem for Biophotonics Innovation EBI All Hands Meeting Agenda

Wednesday, September 19, 2012, 9:30 am – 1:30 pm
CBST Seminar Room
2700 Stockton Blvd, Suite 1400, Sacramento

Facilitator: Leigh Mastrantonio, Founder & CEO, In2Focus

Goal

Provide updates on the progress of the Ecosystem for Biophotonics Innovation (EBI) program and projects; continue to strengthen an ecosystem for medical technology innovation through networking.

Objectives

1. Get to know all players, their roles, and establish or strengthen connections/networks among all involved
2. Get information about the EBI program details, updates, formal program evaluation, success factors and challenges.
3. Contribute ideas and suggestions.

Agenda – all items below include Q&As

9:30 am	EBI Brief Overview & Updates - Dennis Matthews
9:40 am	Applied Precision, Inc, a GE Healthcare company (API/GE) – Paul Goodwin, MS, via web conference
9:50 am	Superresolution Microscopy /OMX project update – Kaiqin Chu, PhD, eFellow
10:00 am	BD Biosciences – Ming Yan, PhD
10:10 am	Cytometry – New Markers and Labels (SERS) – Tatyana Chernenko, PhD, eFellow
10:20 am	Cytometry – New Cytometric Method for Label-free Raman Analysis of Cells – James Chan, PhD, Faculty
10:30 am	Ultrashort Pulse Laser Surgery Tool – Roger Werne, PhD & Michael Messerly, PhD, Lawrence Livermore National Lab (LLNL)
10:40 am	Ultrashort Pulse Laser Surgery Tool – Florian Knorr, MS, eFellow
10:50 am	Break
11:00 am	Tahoe Institute for Rural Health Research (TIRHR)
11:10 am	Zach Smith, PhD, eFellow
11:20 am	California State University at Sacramento: Projects and Engineering capabilities – Warren Smith, PhD
11:35 am	SARTA & MedStart: upcoming events – Cary Adams, JD
11:45 am	Program evaluation – Terry Westover & Stacey Fuller, CEES
12:00 pm	Product design & product design practicum – JDID, Compass Product Design, Inc.
12:20 pm	Next steps
12:25 pm	Lunch & assigned tables & catalyze networking
1:15 pm	Adjourn

Attendees (invited) & roles

Name	Title	Role
Dennis Matthews, PhD Dennis.matthews@cbst.ucdavis.edu	CBST Director, & Faculty - Neurosurgery	PI
Kyriacos Athanasiou, PhD athanasiou@ucdavis.edu	Chair, Dept. of Biomedical Engineering	Co-PI
Steve Currall, PhD scc@ucdavis.edu	Dean, UCD Graduate School of Management	Chair, EBI Board of Directors
Stephen Lane, PhD Stephen.lane@cbst.ucdavis.edu	CBST Chief Scientific Officer, & Faculty - Neurosurgery	CSBT Chief Scientific Officer & OMX Project Lead
James Chan, PhD jwjchan@ucdavis.edu	Faculty, CBST & Pathology Dept.	Cytometry Projects Lead
Sebastian Waschmann-Hogiu, PhD swachsmann@ucdavis.edu	Faculty, Facility Director, CBST & Pathology Dept.	Laser Surgery Lead & Blood Monitor Projects Lead
Tod Stoltz, MBA Tod.stoltz@ucdmc.ucdavis.edu	Director of Business Development and International Relations, UCDHS	UCDHS Business Development, EBI program co- developer
Terry Westover, PhD twestover@ucdavis.edu	Director, UCD Center for Education & Evaluation Services (CEES)	Program evaluation
Alyssa Okita, M.S. aokita@ucdavis.edu	Analyst, UCD Center for Education & Evaluation Services (CEES)	Program evaluation
Stacey Fuller sfuller@ucdavis.edu	Analyst, UCD CEES	Program evaluation
Gabriela Lee, MBA, MS Gabriela.lee@cbst.ucdavis.edu	CBST, Chief Knowledge Transfer Officer	Business Development
OMX eFellow – Kaiqin Chu, PhD kqchu@ucdavis.edu	CBST Project Scientist	eFellow
Cytometry - New markers and labels eFellow – Tatyana Chernenko, PhD tchernenko@ucdavis.edu	CBST Postdoc	eFellow
Automated blood pathology system eFellow – Zach Smith, PhD Zach.smith@cbst.ucdavis.edu	CBST Project Scientist	eFellow
Automated blood pathology system eFellow – Tingjuan Gao, PhD tingao@ucdavis.edu	Dept. of Biochemistry and Molecular Medicine & CBST Project Scientist	eFellow
Ultrashort pulse laser scalpel eFellow – Florian Knorr, MS Fknorr@ucdavis.edu	CBST Staff Research Associate	eFellow
Wil Agatstein wagatstein@ucdavis.edu	Executive Director, The Child Family Institute for Innovation and Entrepreneurship (I2E)	Entrepreneurship education
Cristina Davis, PhD cedavis@ucdavis.edu	Faculty, UCD College of Engineering, Mechanical and Aerospace Engineering (MAE)	Design course
Angelique Louie, PhD aylouie@ucdavis.edu	Faculty, UCD College of Engineering, Biomedical Engineering (BME)	Design course
Cary Adams, JD caryadams@sbcglobal.net	Chair, SARTA MedStart	3 rd party investor
Meg Arnold, MBA meg@sarta.org	CEO, SARTA	BOD member & 3 rd party investor
Dushyant Pathak, PhD dpathak@ucdavis.edu	Associate Vice Chancellor for Technology Management and	UCD Office of Research

	Corporate Relations	
Mona Ellerbrock ml Ellerbrock@ucdavis.edu	Director, Office of Corporate Relations	OCR, UCD Office of Research
Spyros Tseregounis, PhD stserego@ucdavis.edu	Associate of the Chancellor, Lecturer ChemE&MS, Faculty Coordinator, Corporate Relations	OCR, UCD Office of Research
Paul Goodwin, MS pgoodwin@api.com	Director of Advanced Applications, Applied Precision, Inc	BOD member & 3 rd party investor
Ming Yan, PhD Ming_yan@bd.com	Principal Systems Engineer, BD Biosciences	3 rd party investor, Technical Lead
Robyn Raphael robyn@childcancer.org	Founder & CEO, Keaton Raphael Memorial	BOD member & 3 rd party investor
Joseph Victor, MBA Joe.victor@DVSsciences.com	CEO, DVS Sciences	EBI BOD member
Chris Barty, PhD Barty1@llnl.gov	Scientist, LLNL	3 rd party investor, Technical Lead
Michael Messerly, PhD Messerly2@llnl.gov	Scientist, LLNL	3 rd party investor, Technical Lead
Jim Hood, PhD Jim.hood7914@att.net	Chief Scientist, TIRHR	3 rd party investor, Technical Lead
Michelle Spatara, PhD Michelle.spatara@novartis.com	Manager, Emerging Technologies, Novartis Diagnostics	3 rd party investor
Jubal DeLong Jubal@jdidproductdesign.com	Principal, JDID	Product design partner
Ricky Mat Ricky@jdidproductdesign.com	JDID	Product design partner
Curt Anderson curt@compassdesign.com	COMPASS Product Design, Inc	Product design partner
Ellen Blair ellen@compassdesign.com	COMPASS Product Design, Inc	Product design partner
Warren Smith, PhD smithwd@ecs.csus.edu	CSUS, ECE Professor	ECE Professor CSUS, has students interested in projects
Jacob Jorgensen, MD jacob@velocityvc.com	Velocity Venture Capital	VC, mentor
Pete Bernardoni, MS pete@wavepointventures.com	Wavepoint Ventures	VC, mentor
Suzanne Papamichail smpapamichail@ucdavis.edu	CBST Chief Administration Officer	Chief Administration Officer
Andrew Lague Andrew.lague@cbst.ucdavis.edu	CBST IT	IT support
Nancy Rashid, PhD nerashid@ucdavis.edu	Intellectual Property Officer, UCD InnovationAccess	Tech transfer
Frank Chuang, MD, PhD Frank.chuang@cbst.ucdavis.edu	CBST Associate Director for Research and Education	Ecosystem participant
Tim Zhang, PhD tzhang8888@gmail.com	CBST Project Scientist	Project Scientist, OMX project
Iwan Shie iwschie@ucdavis.edu	CBST graduate student	Ecosystem participant
Marco Molinaro, PhD Marco.molinaro@cbst.ucdavis.edu	CBST Chief Education Officer	Ecosystem participant
Deanna Thompson dlthompson@ucdavis.edu	CBST graduate student	Ecosystem participant
Samir Awasthi awasthi@ucdavis.edu	CBST graduate student	Ecosystem participant

Ziliang Mao zmao@ucdavis.edu	CBST graduate student	Ecosystem participant
Latevi Lawson lslawson@ucdavis.edu	CBST graduate student	Ecosystem participant
Cherie Goodenough, MS cherie.goodenough@gmail.com	CBST Knowledge Transfer Manager	Business development
Ruby Gill rksgill@ucdavis.edu	CBST graduate student	Ecosystem participant

*The people whose names are in gray font cannot attend.

BIOS

Cary Adams, J.D. Chair, SARTA MedStart

Cary Adams is the founder of ProXimal Ventures, where he invests in medical device and technology companies. He was the founding President of the Sacramento Angels, and is a former Chair of SARTA, where he now leads its MedStart Program. He has invested in fourteen seed-stage technology companies, eight in the medical device and technology space. Those companies have gone on to raise over \$150 million in venture capital from over thirty VC firms. Cary recently retired from legal practice where he was one of the founding partners of Murphy Austin Adams Schoenfeld LLC, with over thirty years legal practice experience, primarily in the healthcare industry. He has taught Legal Issues in Health Care Delivery to JD, MBA, and MHA students, receiving the Adjunct Faculty Distinguished Service Award at USC's School of Policy Planning and Development in 2006. He is a graduate of the University of Virginia and the University of Maryland School of Law, where he was Editor-in-Chief of the Maryland Law Review.

Wil Agatstein Executive Director, Child Family Institute for Innovation and Entrepreneurship, UC Davis Graduate School of Management Executive Director

Wil Agatstein shares a passion with the Child Family Institute for Innovation and Entrepreneurship for bringing innovative ideas to market. He believes in the power of technology to make the world a better place through economic development, education and allowing people to understand their culture in the context of modernity. As Executive Director, he strengthens the Institute's focus--and networks--on building and launching sustainable businesses that solve real world problems.

Prior to 2008, Agatstein was Vice President at Intel and the head of Intel's Emerging Markets Group. He has nearly three decades of global experience in the competitive high-tech arena. During his 27 years at Intel, Agatstein established a proven track record of innovation of production products, including the start-up of Intel's chip design center in Malaysia and the Intel Powered classmate PC (CMPC)--a small, rugged and personalized laptop for children in the developing world.

Wil currently serves as a board member of Inveneo. When he's not busy at the Institute, Wil is an avid bicycle rider/snow boarder and amateur photographer and is always looking for people to join him on an adventure.

Curt Anderson President, COMPASS Product Design

Curt Anderson has over 30 years of experience designing and managing product development programs for a wide range of clients. Curt founded Compass in 1989 and since that time has been involved in over 500 projects with 200 clients covering a variety of markets and industries. Prior to Compass, Curt managed an industrial design group at Xerox for 10 years and was a staff designer with Tektronix before that. Since the beginning, COMPASS has focused on the design and development of medical products and their medical clients include Tyco Healthcare, IRIDEX, Abbott Laboratories, Alexza, QuantaLife, Cypress Bioscience, Matrix Sensors, Volcano, IntegenX and Reliant Technology. Curt received his BS in Industrial Design from San Jose State University.

Kyriacos A. Athanasiou, Ph.D., P.E. Distinguished Professor of Biomedical Engineering and Orthopaedic Surgery Chair, Department of Biomedical Engineering, University of California Davis The Child Family Endowed Chair in Engineering Editor-in-Chief, Annals of Biomedical Engineering

Kyriacos A. Athanasiou is a Distinguished Professor and the Chair of Biomedical Engineering at the University of California Davis. His areas of research interest include theoretical and experimental bioengineering, from tissue engineering, orthopaedic biomechanics and biomaterials, to articular cartilage

healing and cell mechanics. He has published over 230 peer-reviewed papers, four authored books, and 28 patents. He has also served as president of the Biomedical Engineering Society and received numerous honors and awards. Dr. Athanasiou was the overall winner and the winner of the top prize in the Medical Devices Category of the Wall Street Journal's 2008 Innovation Award Competition. He also received the Hershel M. Rich Outstanding Invention Award in 2008 and 2006.

In addition to his academic interests, he has co-founded numerous bioengineering companies that have collectively brought to the market 15 FDA-approved products.

Dr. Athanasiou received his Ph.D. degree in Mechanical Engineering (Bioengineering) and his M.S. degree Mechanical Engineering from Columbia University.

Ellen Blair
Business Development, COMPASS Product Design

Ellen works closely with Owner/Founder Curt Anderson to develop and maintain client relationships, increase markets for product development, expand presence in online media and provide customer service. She creates and manages programs in the soft goods, research and strategy areas. In addition, she has a vast background in account management, sales, product training, cosmetics/cosmeceuticals and fashion design. While pursuing a BSIT at University of Phoenix, Ellen was the Manager of Client Technologies for Diversified Healthcare and held a position as CIS Senior Analyst - Healthcare Software Solutions and Customizations Programmer/Team Process Analyst - Systems Integration Team for Shared Medical Systems, now Siemens Medical Solutions.

Tatyana Chernenko, Ph.D.
Entrepreneurial Fellow (eFellow), Center for Biophotonics Science and Technology, UC Davis

Tatyana Chernenko received her B.S. degree from Hunter College of CUNY in 2006 and Ph.D. from Northeastern University in 2010 working with Professor Max Diem in the Department of Chemistry and Chemical Biology. Her PhD work focused on the implementation of non-invasive biochemical imaging modalities in pharmaceutical and biological sciences, encompassing IR and Raman spectroscopic techniques. The projects included: establishing varying mitochondrial distributions within the aging mouse oocyte, differentiation patterns of stem cells, and imaging the distribution and dynamics of intracellular nano-drug-delivery carriers. Dr. Chernenko's postdoctoral work revolved around the comparison of targeted and non-targeted polymeric nanoparticles in their capabilities of efficient delivery of a chemotherapeutic. The research utilized non-invasive Raman micro-spectroscopic imaging as well as various fluorescence imaging techniques to extract relevant information in regard to the sub-cellular architecture as well as its responses to external stimuli.

James Chan, Ph.D.
Assistant Professor, Department of Pathology and Laboratory Medicine, UC Davis Health System
Staff Researcher, NSF Center for Biophotonics Science and Technology, UC Davis

Dr. James Chan is an Assistant Professor in the Department of Pathology and a *staff researcher at the NSF Center for Biophotonics Science and Technology (CBST) at the UC Davis Medical Center in Sacramento, CA*. His research interest broadly encompasses the development of label-free spectroscopic and microscopic techniques for biomedical, biosensing, and chemical sensing applications. Techniques of interest include vibrational spectroscopy (Raman, surface enhanced Raman, coherent anti-Stokes Raman, infrared) and second harmonic generation (SHG) microscopy.

Dr. Chan received his Ph.D. in Chemical Engineering and Materials Science from UC Davis in 2002, where he used a combination of confocal Raman and fluorescence spectroscopy to investigate the molecular level structural changes in glass induced by tightly focused ultrashort laser pulses. From 2003-2005, he held a postdoctoral appointment at Lawrence Livermore National Laboratory where he applied Raman and CARS spectroscopy for biological and biomedical research. From 2005-2009, as a Staff Scientist at LLNL, he was involved with research developing and characterizing novel fiber-based chemical sensors based on

vibrational spectroscopy (Raman, IR, SERS) for remote chemical sensing applications while continuing his biophotonics research at CBST.

Kaiqin Chu, Ph.D.

Entrepreneurial Fellow (eFellow), Center for Biophotonics Science and Technology, UC Davis

Kaiqin Chu received her Ph.D. in Optics in 2009, from the University of Rochester, NY. She is an Assistant Project Scientist at CBST and an eFellow, working with Dr. Stephen Lane. Dr. Chu's projects at CBST over the past 2 years include simulation and signal processing for X-ray coherent diffraction imaging, developing new algorithms for structured illumination microscopy, and the designing and testing of a cell-phone based microscope. Her research interests include optical devices and instrumentation, particularly for photography and microscopy, with an emphasis on novel measurement strategies and sophisticated data analysis and image processing techniques. Dr. Chu is proficient in a MATLAB, including complex simulation, optimization and parallel processing, Code V, and she has in-depth knowledge of optical systems and optics bench skills including imaging setup, interferometry setup, and laser alignment.

Cristina Davis, Ph.D.

Associate Professor, Mechanical and Aerospace Engineering, UC Davis College of Engineering

Dr. Cristina Davis is currently an Associate Professor in the Department of Mechanical and Aerospace Engineering at the University of California, Davis. Her main research interests are in chemical and biological sensing applications, use of technology to speed biomarker discovery, novel bioMEMS devices, and bioinformatics interpretation of sensor output.

After graduating with degrees in mathematics and biology from Duke University, she obtained a Ph.D. in biomedical engineering at the University of Virginia, in 1999. She then did a postdoctoral fellowship in electrical engineering and physiology at The John Hopkins University, after which she was involved with several start-up companies and worked in industry for slightly more than half a decade. She then returned to academics and came to UC Davis.

Dr. Davis has extensive industry and international experience, and has received numerous awards, including the 2010 Hartwell Individual Biomedical Research Award and the 2010 Hartwell Investigator designation from The Hartwell Foundation. She served as a chair or committee member for a multitude of scientific events, including an annual Breath Analysis for Biomedicine and National Security workshop with LLNL and SRI.

Jubal DeLong

Principal Industrial Designer, JDID product design + development

With nearly 20 years professional experience, Jubal DeLong has served clients, from lean startups to Fortune 500 companies. The resulting portfolio spans a wide variety of demanding consumer and commercial product development projects, from lifestyle merchandise to technical medical devices and numerous award winning consumer electronics. JDID's comprehensive experiences in product development include collaboration and management of multi-faceted projects, carrying hundreds of concepts from whiteboard to mass-production while securing new IP and strategic development of global design languages. JDID's work has been recognized for both design and engineering excellence. JDID's partners have included Altigen Communications, Evena Medical, EZ-CLONE, GE, Globalstar, RIM, SiGNa Chemistry, TV Ears, VOLCANO and many more. Jubal received his BFA in Industrial Design from San Francisco Academy of Art University.

Stacey Fuller

Evaluation Analyst, CEES

Tingjuan Gao, Ph.D.

Entrepreneurial Fellow (eFellow), Center for Biophotonics Science and Technology, UC Davis

Tingjuan Gao received her B.S. degree in Chemistry from Peking University in Beijing, China. At UC Davis, she conducted research with Dr. Huser and Dr. Coleman at the CBST for three years, first as a postdoctoral fellow and then as an Assistant Project Scientist. She has been involved in characterizing nanolipoprotein particles (nanodiscs) using single molecule fluorescence spectroscopy, and characterizing N. Punctiforme photosensory signal transduction using optical super resolution microscopy in combination with single molecule spectroscopy. Dr. Gao is now working with Dr. Sebastian Wachsmann-Hogiu as an eFellow, as well as with Dr. Steve Lane and Dr. Kit Lam. She was an intern with Vertex Pharmaceuticals of Cambridge, MA and with Diffinity Genomics of Rochester, NY, and has strong interests in entrepreneurship, technology development and commercialization. Dr. Gao received her Ph.D. in Physical Chemistry from the University of Rochester, NY in 2008.

Cherie Goodenough, M.S.

Manager, Industry Outreach and Commercialization, NSF Center for Biophotonics Science and Technology, UC Davis

Insert brief bio here.

Paul Goodwin, M.S.

Director of Advanced Applications and Technical Fellow, Applied Precision, A GE Healthcare Company

Paul Goodwin leads business development and key accounts as the Director of Advanced Applications at Applied Precision, a GE Healthcare Company. Prior to Applied Precision Inc., he was the Manager of the Image Analysis Laboratory at Fred Hutchinson Cancer Research Center.

Paul holds a M.S. degree in Physiology and Biophysics from University of Washington, and is a specialist in microscopy, image analysis, and application development.

James Hood, Ph.D.

Chair of the Scientific Advisory Committee, Tahoe Institute for Rural Health Research

Dr. James D. Hood is currently the Chairman of the Scientific Advisory Committee of the Tahoe Institute of Rural Health Research. He received his Ph.D. degree at the University of Oklahoma in 1966. Dr. Hood has over 38 years of experience in the development, manufacture and sales of high technology electronic equipment and systems with twenty years of general management responsibilities. At four separate companies, Dr. Hood has developed products based on research completed at major Universities. As part of the senior management team, he has grown early phase companies into mature operations. He has managed both domestic and international operations. Dr. Hood has held positions of CEO, CTO, COO and Executive-in-Residence.

Florian Knorr, M.S.

Entrepreneurial Fellow (eFellow), Center for Biophotonics Science and Technology, UC Davis

Florian Knorr has worked at CBST for four years, specializing in linear and non-linear microscopy. He has degrees in medical and biomedical engineering, and recently completed an M.S. in Biomedical Engineering at UC Davis. Examples of projects he has been involved with under the direction of Dr. Sebastian Wachsmann-Hogiu are: the combination of confocal microscopy with Raman spectrometry, and a fluorescence lifetime endoscope. Florian is a CBST eFellow, as well as being active in the educational outreach activities of CBST.

Stephen M. Lane, Ph.D.

**Chief Scientific Officer, NSF Center for Biophotonics Science and Technology, UC Davis
Adjunct Professor, Department of Neurological Surgery, UC Davis Health System
Associate Program Leader Medical Technology Program, Physics and Advanced Technology
Directorate, Lawrence Livermore National Laboratory**

Dr. Lane received an M.S. and Ph.D. in Applied Science Engineering from the University of California at Davis in 1978. From 1978 until 1984 Dr. Lane was an experimental physicist in the Inertial Confinement Fusion (ICF) Program at Lawrence Livermore National Laboratory (LLNL), developing and fielding x-ray, neutron, and charged particle diagnostics for laser fusion implosion experiments. From 1984-1990 he was a Group Leader in the ICF program, responsible for 4-6 Ph.D. scientists and an engineering and technical staff, administering an annual budget of \$3M. This group became the acknowledged international leader in nuclear diagnostics for laser fusion applications. In 1991, Dr Lane was a visiting scientist at the University of California, Berkeley, Nuclear Engineering Dept. where he designed novel gamma-ray spectrometers and dosimeters and taught graduate nuclear physics. Since 1992 Dr. Lane has been a senior scientist, Group Leader, and Associate Program Leader in the Medical Technology Division at LLNL. He leads the Science and Technology Program at the NSF Center for Biophotonics Science and Technology at UC Davis as its Chief Scientific Officer.

Dr. Lane's research interests include optical, X-ray, neutron and charged particle detectors for dosimetry and medical applications, X-ray optics and microscopy, optical sensors, single molecule microscopy, and Monte Carlo neutron, photon, and electron transport computer simulations.

Dr. Lane has been the principal investigator for the past 4 years of a DARPA funded program to develop collimator optics for proximity X-ray lithography and a NIST/NIH/industry funded program to develop a transdermal optical glucose sensor to treat diabetes.

Dr. Lane holds four patents, has over 40 publications and has received two R&D 100 Awards for one of the 100 most important inventions of the year. This year Dr. Lane received the 2001 Award for Excellence in Technology Transfer by the Federal Laboratory Consortium for Technology Transfer and, at a White House ceremony, the Department of Energy Bright Light Award for innovations that benefit the American public. Both of these awards were for work on optical glucose sensors for the treatment of diabetes.

Gabriela Lee, M.B.A., M.S.

Chief Knowledge Transfer Officer, NSF Center for Biophotonics Science and Technology, UC Davis

Gabriela Lee is the Chief Knowledge Transfer Officer at the NSF Center for Biophotonics Science and Technology at UC Davis. She directs the Knowledge Transfer Program at CBST, and manages operations for the "Medical Technology Commercialization Clinic" under the NSF Partnerships for Innovation, and the NSF I/UCRC Center for Biophotonic Sensors and Systems, among others. Prior to this position, she was a Director of Partnerships and New Program Development, Associate Director of External Relations, and a UC Discovery Fellow (UCOP) at CBST. She also worked as a Process and Product Development Engineer, and as a Research Associate at Cerus Corporation, a biopharmaceutical company in the Bay Area.

Gabriela received a joint M.B.A./M.S., Biomedical Engineering from UC Davis, and a B.S. degree in Chemical Engineering from the Technical University "Gh. Asachi" in Iasi, Romania.

**Leigh Mastrantonio
CEO, In2Focus**

Leigh Mastrantonio is CEO of In2Focus. For over 20 years Leigh's enthusiasm, positive approach, and leadership has influenced organizations to achieve excellence. Her hands on experiences in managing worldwide teams at Intel Corporation and running day to day operations at La-Z-Boy Furniture Galleries provides a direct understanding of the challenges leaders face in today's economic environment. She has spent the past 5 years as a strategy and organizational coach, partnering with growth-oriented leaders to define and implement the best strategies to achieve the success and growth they desire. By developing collaborative partnerships, Leigh challenges the status quo so leaders align their actions and decisions to improve teamwork, attract more customers, and create greater profits.

Leigh is also an accomplished speaker and facilitator and enjoys the opportunity to interact and learn from the experiences of her audience. She has been a keynote speaker for the CA Army National Guard Officer's Conference, the Schumacher Group Medical Director's Conference, and the La-Z-Boy Furniture Galleries National Dealer's Conference. She has also spoken locally at the Placer County Association of Realtors and at the Roseville Chamber of Commerce Small Business Speakers Series.

Leigh received her degree in Biological Sciences from UC Davis and holds certificates in Project Management and Virtual Facilitation. She will complete her Master's Degree in Organizational Leadership in March 2012. She is married to Pat, her husband of 25 years and has 2 children, Adam (a sophomore in college) and Carissa (a freshman in high school). She is a member of the Sacramento Area Regional Technology Alliance (SARTA) and the Roseville Chamber of Commerce; she also serves as a mentor for the Center for Entrepreneurship at the UC Davis Graduate School of Business Management and has been an active fundraising chairperson for her children's schools since 1999.

She strongly believes that every business deserves to win and the only limits we put on unleashing our potential are the limits we place on ourselves.

Dennis L. Matthews, Ph.D.

Professor, UC Davis School of Medicine

Director, NSF Center for Biophotonics Science and Technology, UC Davis

Co-Founder, Biophotonics for Life Worldwide Consortium

Site Director, NSF I/UCRC Center for Biophotonics Sensors and Systems

Associate Director, UC Davis Cancer Center

UC Davis and Lawrence Livermore National Laboratory

Dr. Matthews is the Director of the NSF Center for Biophotonics Science and Technology, Site Director for the NSF Industry/University Cooperative Research Center, Associate Director of the UC Davis Cancer Center, and Co-Founder of the Biophotonics for Life Worldwide Consortium, as well as professor at the UC Davis School of Medicine. He directly supervises ~50 scientists, engineers, 8 graduate students, a 25 student summer intern program and 8 other support staff. Dr. Matthews is responsible for the development of industrial and medical applications of Lawrence Livermore National Lab Technology, especially for the prevention, screening, diagnosis and treatment of diseases such as diabetes, stroke, brain trauma, chronic pain and cardiovascular disease. Dr. Matthews leads a multi-directorate program within Livermore whose mission is to develop medical devices in collaboration with industry. Current projects and those already successfully transferred to industry include: an opto-acoustic recanalization device for treating ischemic stroke; a miniature x-ray source which is mounted on a microcatheter and used to treat coronary artery restenosis; micropower impulse radar for numerous medical diagnostics including differentiating hemorrhagic vs. ischemic stroke; an implantable, continuous glucose monitor and ultra-short-pulse laser microsurgery devices.

Dr. Matthews was a co-Principal Investigator on a Department of Energy funded Center of Excellence for Application of Lasers to Medicine and on a NIH Unconventional Innovations Program Grant to Develop Compact Light Sources for Mammography and Radiotherapy.

Dr. Matthews has also worked for short periods at the Hahn Meitner Institut in Germany, Rutherford-Appleton Laboratories in Great Britain, the University of Paris-Orsay and the Centre d'Etudes de Limeil-Valenton in France. He has also lectured at numerous universities and research centers in the United States, Europe and Japan.

Dr. Matthews is an expert on the radiative properties of ions in plasmas as well as in the conversion of laser light into X-rays. He is widely acknowledged to have invented and developed the x-ray wavelength lasers. Among many other applications of that technology, he continues to collaborate with biologists, in order to use x-ray lasers to generate x-ray images of living subcellular material, and with materials scientists, to develop new methods of studying materials properties and defects.

Dr. Matthews has written over 170 publications in the scientific literature and holds numerous patents, especially for medical devices and commercial applications of lasers. He is a fellow of the American Physical Society and the Optical Society of America and is a co-recipient of the 1990 Division of Plasma Physics Award for Excellence in Plasma Physics Research. He is also a member of the American Physical Society,

Optical Society of America, the Society of Photographical and Industrial Engineers and the Institute for Electrical and Electronics Engineers.

Finally, Dr. Matthews is extremely active in commercializing technologies developed at the national laboratories. He specializes in helping investors or small companies obtain the technologies needed to capture profitable new markets. He has already helped investors put together several startup companies based on Livermore and other national lab technologies. He has broad scientific management and marketing skills, having managed programs as large as \$30M/yr while at Livermore and having successfully garnered project funding from both government and private sources.

He received his Ph.D. in Physics in 1974 from the University of Texas at Austin. His thesis work dealt with the understanding the radiative and collisional ionization properties of energetic heavy ions moving through gases and solids.

Alyssa Okita, MS

Evaluation Analyst, Center for Education and Evaluation Services, UC Davis

Alyssa Okita brings a background in quantitative analysis, program evaluation, and survey methods and design. She earned a Master's degree in Statistics, Measurement, Assessment, and Research Technology from the University of Pennsylvania and has a Bachelors degree in mathematics from Bucknell University. Her quantitative background includes experience with various advanced statistical and psychometric methods. Her interests include issues of equity and access in education, education of urban/at-risk youth, and STEM education programs.

Warren Smith, Ph.D.

Professor, Electrical and Electronic Engineering, California State University, Sacramento

Dr. Warren Smith is Professor of Electrical and Electronic Engineering in the College of Engineering and Computer Science. Dr. Smith has broad experience in biomedical instrumentation education, having developed and taught lectures and lab courses on diagnostic and therapeutic devices for the cardiovascular, respiratory, fluid balance, and thermoregulatory systems.

Dr. Smith received his B.S. degree from Princeton University, M.S. degree from University of New Mexico, and his Ph.D. degree from University of Oklahoma. He conducted a postdoctoral fellowship at the University of New Mexico Medical School.

Zach Smith, Ph.D.

Entrepreneurial Fellow (eFellow), Center for Biophotonics Science and Technology, UC Davis

Zachary Smith received his B.S. in Optics with Highest Distinction, and his Ph.D. in Optics, both from the University of Rochester, NY. His research interests include biophotonic devices and instrumentation, specifically related to Raman and elastic scattering, with an emphasis on novel measurement strategies and sophisticated data analysis techniques.

Dr. Smith is an Assistant Project Scientist at CBST and eFellow working with Dr. Sebastian Wachsmann-Hogiu. The research he has undertaken at CBST includes developing an ultrafast optical gate for background suppression in Raman spectroscopy of living samples, developing a new spectroscopic detection system utilizing the concepts of compressive sensing and optical computing to perform high-speed sample quantification and spectral unmixing, and developing attachments which transform a cell phone into a microscope and spectrometer. Dr. Smith is also involved extensively in educational outreach at the CBST, including as guest lecturer, teaching assistant, lab instructor, and internship mentor. He received a number of awards, including the National Merit Scholar award.

Mary Stump

Evaluation Analyst, Center for Education and Evaluation Services, UC Davis

Mary Stump has more than 15 years of experience in program management, evaluation, and organizational development in the field of education. She has expertise in large scale process evaluation, qualitative analysis, and survey development. Mary has worked on a broad range of evaluations and research projects, including working with interdisciplinary teams to develop and implement randomized controlled studies of

professional development interventions intended to improve science and literacy learning in secondary schools, and also small independent studies of professional development programs. She is currently evaluating several STEM education projects based in Bio and Ag Engineering at UC Davis.

Sebastian Wachsmann-Hogiu, Ph.D.

Associate Professor in Residence, Department of Pathology and Laboratory Medicine, UC Davis Health System

Chief Scientific Officer, NSF Center for Biophotonics Science and Technology

Dr. Wachsmann-Hogiu did his undergraduate studies in Physics, with a major in Biophysics at the Bucharest University, Romania. In 2000 he received his Ph.D. in Experimental Physics from Humboldt University/Max-Born-Institute, Berlin, where he used time-resolved Raman/CARS spectroscopy to investigate elementary chemical reactions.

After a two-years postdoctoral appointment in the Chemistry Department at Carnegie-Mellon University, where he performed Stark spectroscopy on conductive polymers and biological materials, he moved to Cedars-Sinai Medical Center as Research Scientist I.

In March 2005, he became faculty (assistant professor level) within the Surgery Department, and the Director of the Advanced Optical Imaging Laboratory within the Minimally Invasive Surgical Technologies Institute. There, he was involved with translating novel optical technologies into viable tools for biomedical applications.

Since April 2007, he has been the Facilities Director at the NSF Center for Biophotonics Science and Technology and was appointed as Associate Professor in the Department of Pathology and Laboratory Medicine in September 2008. He is now Chief Scientific Officer at CBST.

Sebastian co-authored more than 40 publications in refereed journals and book chapters and is actively participating in education programs at CBST and UC Davis. He is also interested in commercialization new technologies for the biomedical field. Currently, he is a member of the American Physical Society, Biophysical Society and American Chemical Society.

Ming Yan, PhD

Principal Scientist, BD Biosciences

Dr. Ming Yan is a principal scientist at the BD Biosciences in San Jose. In BD, he has worked in the areas of cytometer instrumentation, architecture development and system standardization. He also worked in the area of optical and laser technologies during his career including optical waveguide for communication, laser spectroscopy and microscope for organic and biological materials. He has published over 50 papers and 6 patents in those areas. He received his Ph.D. degree in electrical engineering from the City University of New York, and his B.S. in physics from Fudan University, China. Prior to joining BD Biosciences, he also held engineering and managing position at Lightwave Micro and Neophotonics Corp, and staff positions at Lawrence Livermore National lab and AT&T Bell Laboratories.